

## CLAIMS

What is claimed is:

1. Differential for a motor vehicle, comprising:

a bevel-pinion shaft (5) supported in a drive housing (1) by first and second spaced and axially pretensioned angular contact ball bearings which, through a bevel pinion (4) on the shaft and a ring gear (6), drives a differential unit (2) mounted in the drive housing (1), axle shafts (9) being supported in the differential unit (2) which are operationally connected with each other via output gears (8) and differential gears (7) in the differential unit, the first and second angular-contact ball bearings are unilaterally loadable double-row tandem angular-contact ball bearings (16,17) which each include a one piece inner bearing ring (18) with two outwardly facing races and a one piece outer bearing ring (19) with two inwardly facing races, and balls located in the races,

wherein the races of each of the first and second angular-contact ball bearings have different diameters and different pressure angles, whereby the inner bearing ring (18) and the outer bearing ring (19) of each of the first and second angular-contact ball bearings (16, 17) include two shoulders (20, 21), each of the races consisting of a single shoulder, the bearings being arranged to face each other in an O-arrangement such that an axially directed load from the bevel pinion to the bevel-pinion shaft is transferred from the shoulders of the inner race of the first bearing, which is located adjacent to the bevel pinion, through the balls to the outer race of the first bearing which is seated in the drive housing, and an oppositely

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directed axial load on the bevel-pinion shaft from a drive shaft connected end is transferred from the shoulders of the inner race of the second bearing through the balls to the outer race of the second bearing which is seated in the drive housing, and

the inner ring (18) of the second double-row tandem angular-contact ball bearing (17) is supported in an axial direction with a deformable sleeve (25) acting against an end of a shank (15) of the bevel-pinion shaft (5), and a threaded piece (11) is located on an end of the bevel-pinion shaft so that both of the angular contact ball bearings can be pre-tensioned by adjusting the single threaded piece (11) on the bevel-pinion shaft.

2. The differential of claim 1, wherein the deformable sleeve has a smaller diameter than an inner diameter of the first bearing, allowing the bevel pinion shaft to be drawn toward the threaded piece to pre-load both of the angular contact ball bearings by movement of the inner races towards each other.

3. The differential of claim 2, wherein the first bearing has a larger diameter than the second bearing, and the balls of the first bearing all have a first, larger diameter than the balls of the second bearing, the balls of the first bearing being generally equally pre-loaded by the pre-tensioning and the balls of the second bearing being generally equally pre-loaded.

4. The differential of claim 1, wherein the angular contact ball bearings each include two bearing cages to maintain the balls in position, the cages being spaced axially inwardly from a respective axial end of each of the angular contact ball bearings to allow pre-tensioning of the bearings without loading the bearing cages.